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Title : USING HABITAT SELECTION MODELS TO ASSESS SPATIAL INTERACTION BETWEEN BOTTLENOSE DOLPHINS (*Tursiops truncatus*) AND FISHERIES IN SOUTH-EAST SPAIN

Category : Conservation

Student : M.A./M.S.

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Abstract : Direct interactions, as hunting or net damage, between bottlenose dolphins and fisheries have been reported quite regularly all over the Mediterranean Sea. In the southern coast off Spain those direct interactions don't seem to be very common at present. Nevertheless, another kind of interaction is possibly occurring, as competition for trophic resource or habitats. In this presentation, habitat selection models are used to explore the degree of overlapping between the habitats preferred by dolphins and fishing boats (trawlers). GLMs were used to build the models for both 'species': bottlenose dolphins and fishermen. The study area, from the Strait of Gibraltar to Cabo de Palos (Murcia), was divided in 3008 grid cells of 2 by 2 minutes of longitude - latitude. Oceanographic variables (sea surface temperature obtained from satellite images), physiographic variables (depth, slope) and geographic variables (latitude, longitude distance to coast, distance to nearest port) were used to characterize each grid cell and as predictor variables in the GLM models. Overlapping between preferred habitats for both species was analysed using correlations. Surveys were conducted in the area between 1992 and 2002 covering 19,864 nautical miles. Data was collected from 226 encounters with bottlenose dolphins and 330 fishing boats. The models were significant showing active habitat selection by both species. The results of both models were used to predict presence and density of dolphins and fishing boats in all grid cells of the survey area. Positive correlation was found between the habitats preferred by dolphins and fisheries. These analyses were used to develop the first guidelines for the management schemes for the Marine Protected Areas that have been proposed for bottlenose dolphins to the Spanish Ministry of Environment as part of a research project for the identification of areas of special interest for the conservation of cetaceans in Spanish Mediterranean waters.